Environmental Analysis

For the

Woodward Point White Pine Realized Gain Trial

Prepared By

Forest Management Bureau, Trust Land Management Division

Montana Department of Natural Resources and Conservation

September 2011

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CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Woodward Point White Pine Realized Gain Trial
Proposed Implementation Date:	September 2011-June 2012
Proponent:	Forest Management Bureau, Trust Land Management Division: Montana DNRC
Location:	Swan Lake, Montana
County:	Lake

I. TYPE AND PURPOSE OF ACTION

The Montana Department of Natural Resources and Conservation (DNRC), Trust Lands Management Division (TLMD), Forest Management Bureau, in cooperation with the Inland Empire Tree Improvement Cooperative and USDA Forest Service, proposes to establish a research site for a western white pine realized gain trial on 28 acres in the Swan River State Forest. Realized gain trials are done to evaluate the performance of improved seed sources under operational conditions.

Western white pine (*Pinus monticola*) has a limited distribution in Montana due to its requirements for moist growing sites, and plays an important ecological role where it occurs. White pine blister rust (*Cronartium ribicola*), a non-native disease affecting five-needle pines, has greatly reduced the amount of western white pine on the landscape of the Inland Northwest. Maintaining current western white pine stands and restoring western white pine in areas where it has historically occurred are key components of DNRC's strategies to promote biodiversity on State lands. Information collected from the proposed study would assist DNRC in its efforts to successfully manage for western white pine.

The proposed project area is located approximately 10 miles south of Swan Lake, Montana within Section 2, T.23N, R.18W (see Vicinity Map and Site Location Maps in Attachment A). The acreage of state land involved in the project is held by the State in trust for the support of specific beneficiary institutions (*Enabling Act, 1889: 1972 Montana Constitution, Article X, Section 11).* s. 2 – Common Schools.

Under the proposed action, approximately 28 acres in Section 2 would be treated with timber harvesting and site preparation activities followed by planting of approximately 7000 western white pine seedlings in order to install a western white pine realized gain trial. The realized gain trial would be a cooperative, long-term study to evaluate tree growth, blister rust infection rates, and mortality of rust-resistant western white pine in a natural environment. Data collected from this study would be used to evaluate and compare various rust-resistant seed sources with the goal of improving those seed sources for use in future reforestation activities involving western white pine throughout the Inland Northwest.

If the Action Alternative is selected, activities could begin in September 2011.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:
Provide a brief chronology of the scoping and ongoing involvement for this project.

DNRC resource specialists and pertinent staff were informed and visited the project area. The Director of the Inland Empire Tree Improvement Cooperative also visited the project area.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Montana Department of Environmental Quality

DNRC is classified as a major open burner by the Montana Department of Environmental Quality (DEQ), and is issued a permit from the DEQ to conduct burning activities on State lands managed by the DNRC. As a major open burning permit holder, DNRC agrees to comply with all of the limitations and conditions of the permit.

Montana/Idaho Airshed Group

DNRC is a member of the Montana/Idaho Airshed Group, which regulates prescribed burning, including both slash and broadcast burning, related to forest management activities done by DNRC. As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit in Missoula, MT.

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3. ALTERNATIVES CONSIDERED:

No Action Alternative: Under the No Action Alternative, the western white pine realized gain trial would not be established on state land. No timber harvesting would occur, but site preparation and tree planting planned as part of the White Porcupine Multiple Timber Sale project would continue. Effects of the No Action Alternative are further described in the Resource Analyses in the Checklist EA.

Action Alternative: Under the Action Alternative, DNRC would establish a realized gain trial for western white pine on 28 acres of State trust land (see Site Location Map in Attachment A). Timber harvesting would remove approximately 85 MBF from 28 acres, with a seed tree removal treatment on 28 acres previously harvested in cutting unit 2-20 of the White Porcupine #1 Timber Sale. Site preparation and planting of approximately 7000 western white pine seedlings would occur on up to 28 acres.

The proposed action will require two site-specific alternative practices to the Administrative Rules of Montana (ARM) for Forest Management (see Attachment C). Other issues have been resolved or mitigated through project design or would be included as specific contractual requirements of this project. Recommendations to minimize direct, indirect and cumulative effects have been incorporated in the project design.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

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4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:
Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Affected Area: According to the Soil Survey of Flathead National Forest Area, Montana (Martinson and Basko, 1999) the soil in the proposed project area is listed as map unit 26C-9. The attributes of this map unit are presented below in *Table 1* (DNRC, 2009a).

Map Unit	Map Unit Name	Landform	Erosion & Sediment Delivery Efficiency	Compaction / Displacement Hazard
26C-9	Andeptic Cryoboralfs, silty till substratum, steep.	Glaciated mountain slopes and ridges with dominant slopes from 40-60%. Typically mantled with glacial tills. Drainage is dentritic and widely spaced.	Moderate erosion hazard. High sediment delivery efficiency.	Moderate / High

Table 1; Physical properties of the soil map unit within the project area and associated risk of affects from management and/or research activities

Existing Condition: The site had timber harvest conducted within the very recent past. Skid trail spacing is approximately 50-60 feet, on average, and no skid trail erosion was identified during field review. At a 60-foot average spacing on skid trails, approximately 20% of the area was trafficked by ground-based equipment, and approximately 15% of the total soils on the site were left in an impacted condition (DNRC, 2009b). This is within the levels analyzed for in the White Porcupine Multiple Timber Sale Project EIS (DNRC, 2009a). Approximately 10-12 tons of large woody material was left on the site for nutrient cycling.

Direct, indirect and cumulative effects: The expected impacts to the site as a result of the proposed project are:

1) Direct and indirect impacts include soil disturbance, including possible compaction and/or displacement, as a result of ground based machinery traffic in order to remove and pile woody material. This is expected to be light disturbance, more akin to scarification, and has a low risk of affecting tree growth. Risk of adverse effects to the soils would be minimized by limiting brush piling to periods where soil moisture is below 20%.
2) Cumulative effects include the potential of repeat entries increasing compaction or displacement when considered with past entries. The risk of adverse cumulative effects to compaction and displacement would be minimized by limiting brush piling to periods where soil moisture is below 20%. All established skid trails should also be reused.

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5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Affected Area: The project area is within a portion of the Swan River watershed that contributes receiving waters from hillslope drainage to the aquifer supporting the river. No stream channels or drainage features exist within the proposed project area.
Existing Condition: In general, a very large portion of upland area of this watershed has been historically harvested as well as recently harvested but riparian forests and channel migration zones are largely intact and functional. The project area specifically was harvested in 2010 with a seedtree prescription leaving approximately 6 trees per acre. It is expected that approximately 6-8 percent of the project area contain soils with reduced hydrologic function.

Direct, indirect and cumulative effects: There is a very low risk of adverse direct or indirect effects to water yield and water quality as a result of the proposed activities. The remaining forest canopy (~6 trees/acre) has been highly modified over that of fully forested condition and provides little, if any, controls on interception and evapotranspiration processes. Therefore removing this remaining volume would have immeasurable affects to water yield. The absence of any drainage features within the project area extremely limits the potential for direct sediment delivery from timber harvesting. BMP maintenance was recently completed on the haul route that would be utilized for this project as part of the White

Porcupine #1 Timber Sale contract. Lack of potential point source sediment sources from this route present a very low risk of indirect sediment delivery or water quality impairment from the proposed actions.

A high probability of low to moderate level cumulative effects to water yield exist as a result of this proposed action. Runoff response is expected to be much more rapid and water yields higher when compared to fully forested conditions within this watershed. These effects would be expected to be measureable in hydrograph response and late summer base flow increases. No cumulative effects to water quality from sediment sources outside the channel would be expected. In stream sediment transport rates would be expected to increase in concert with water yield increases though at different magnitudes. No changes in stream channel stability would be expected.

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6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

The project area is within Airshed 2 as described by the Montana/Idaho Airshed Group. The project area is not within a Class I area and is not near any Impact Zones. Burning of slash piled during site preparation activities would release small amounts of particulate into the atmosphere; however, burning activities would be completed in accordance with the limitations and conditions of DNRC's major open burning permit issued by the Montana DEQ and accordance with Montana/Idaho Airshed Group operating procedures. Any potential impacts from smoke generated during slash burning activities are expected to be minor and temporary in duration. Because DNRC is a member of the Montana/Idaho Airshed Group, which coordinates burning activities among its members, no cumulative effects to air quality are expected.

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7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

The project area encompasses a 28 acre area that was previously treated as a part of cutting unit 2-20 in the White Porcupine #1 Timber Sale. The project area includes one DNRC Stand Level Inventory (SLI) polygon, with information for the stand summarized below.

Stand ID	23_N18_W020000D	**Age Class**	150+
Acres within Project Area	28	**Trees/Acre**	6
Slope	30%	**Basal Area/Acre**	21.7 $ft.^2$
Aspect	East	**Mean Diameter at breast height (dbh)**	25.5 in.
Elevation	3600 ft.	**Net Volume**	85.2 MBF
Habitat Type	THPL/CLUN (western redcedar/queencup beadlily)	**Species Composition (in terms of volume)**	Western White Pine – 15% Western Larch – 85%
Current Cover Type	Western White Pine	**Stand Structure**	Single-storied
Desired Future Condition	Western White Pine	**Total Stocking**	Poor
Old Growth Status	Not Old Growth	**Sawtimber Stocking**	Poor

There are no old-growth stands in the project area. No rare or sensitive plants or vegetative communities are present within the project area.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No appreciable changes in vegetative cover, quantity, and quality would occur in the project area. Site preparation and planting activities planned under the White Porcupine Multiple Timber Sale EIS would occur as planned in the proposed project area.

Direct, Indirect, and Cumulative Effects of the Action Alternative

The remaining seed trees within the 28 acre project area would be removed, and snags would be removed on up to 17 acres in the project area. Advanced regeneration, non-merchantable timber, and non-timber species, such as birch, present in the project area would also be removed.

The current cover type and desired future condition of western white pine would be maintained as a result of planting of approximately 7000 western white pine seedlings, and the age class of the stand in the project area would shift from 150+ years to 0-39 years. Stand structure would remain single-storied. Stand stocking would change from a poorly-stocked sawtimber stand to a well-stocked seedling/sapling stand.

Because the project area recently received timber harvesting activities that were analyzed under the White Porcupine Multiple Timber Sale EIS (January 2009), no additional previously untreated stands are proposed for entry under the proposed action, and the site preparation and planting activities proposed are within the scope of the activities analyzed for in the White Porcupine EIS, no additional cumulative effects beyond those previously analyzed in the White Porcupine EIS are expected.

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8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

The 28-acre study site would occur in the southeast ¼ of section 2, T23N, R18W in a recently logged seed tree harvest unit (175-acres) that was described and analyzed in the DNRC White Porcupine Multiple Timber Sale EIS. Virtually all of the notable potential or realized impacts to wildlife and/or habitat associated with this seed tree logging unit were addressed in that EIS in 2009. Thus, the current baseline habitat condition for previously treated 175-acre stand that the 28-acre proposed study site would occur within is a sparsely forested seed tree harvest unit with approximately 6 trees/acre, primarily consisting of western larch and western white pine averaging greater than 20 inches dbh. As changes in primary habitat attributes were addressed and described in the White Porcupine Final EIS (e.g. habitat connectivity, linkage, patch size, old growth, grizzly bear cover, lynx habitats, fisher habitat etc.), the only additional changes or impacts that would be anticipated beyond those previously analyzed would include: 1) removal of all of the seed trees and coarse woody debris on the 28 acres proposed as the white pine study site, 2) the additional disturbance associated with the removals, 3) the additional disturbance associated with tree planting, , 4) the periodic future disturbance associated with measuring study trees, and 5) the possible shift of cover type from "western larch/Douglas-fir" to "western white pine" on 28 acres.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No activities associated with the proposed project would occur, thus, no direct, indirect, or cumulative effects would be anticipated.

Direct, Indirect, and Cumulative Effects of the Action Alternative

Under the proposed action no additional changes in access, stand age, thermal cover, snow intercept cover, hiding cover, patch characteristics, habitat connectivity, linkage, or old growth would be anticipated beyond that previously analyzed in the White Porcupine FEIS.

Snags and coarse woody debris would be removed on the 28-acre study site, which would result in a minor reduction in habitat attributes for species that rely on them for nesting, resting and foraging sites. The proposed 28- acre study area represents 16% of the overall original 175-acre seed tree harvest unit as analyzed in the earlier EIS. At the time of initial harvest of this unit, 6 trees per acre were retained (approximately 5 live and 1 dead snag) to meet regeneration and snag retention objectives. Given that original residual seed tree density following harvest was approximately 1/3 greater than those required under ARM 36.11.411, (i.e, 4 combined large snags and recruits), ample snags and recruitment trees would remain following the proposed removal. Removal of all snags and seed trees would result in an overall reduction at the scale of the original 175-acre harvest unit of about 1 tree/acre leaving a stand average of ~5 large trees and snags per acre. Thus, minor additional adverse direct, indirect and cumulative impacts to species associated with snags and coarse woody debris would be anticipated.

The following disturbance types and amounts associated with the proposed action would occur in addition to those previously analyzed under the White Porcupine FEIS. These include:
-Remove remaining seed trees -- motorized logging equipment in fall 2011-- 3 days.
-Prepare planting sites -- heavy equipment/excavator in fall 2011-- 7 days.
-Plant seedlings -- planting crew/vehicle access to site in spring 2012 -- 7 days.
-Future data collection -- monitoring crew/vehicle access several days in summer at years 3, 5, 7, 10, 15, 20, and 25.

Given the scope, scale, and disturbance types associated with the proposed action, minor adverse direct, indirect, or cumulative effects to wildlife species that are sensitive to motorized disturbance, non-motorized disturbance, and/or cover type conversion would be anticipated.

Aquatics

No fish-bearing streams are found within 200 feet of the proposed project area. As specified in the water quality analysis, there is a very low risk of sediment delivery to this stream. As a result no impacts to fish or aquatic species are expected to result from this project.

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9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Habitat for grizzly bears and Canada lynx exists on the Swan River State Forest and study site vicinity where the proposed action would occur.

The following disturbance types and amounts associated with the proposed action would occur in addition to those previously analyzed under the White Porcupine FEIS. These include:
-Remove remaining seed trees -- motorized logging equipment in fall 2011-- 3 days.
-Prepare planting sites -- heavy equipment/excavator in fall 2011-- 7 days.
-Plant seedlings -- planting crew/vehicle access to site in spring 2012 -- 7 days.

-Future data collection -- monitoring crew/vehicle access several days in summer at years 3, 5, 7, 10, 15, 20, and 25.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No activities associated with the proposed project would occur, thus, no direct, indirect, or cumulative effects to Canada lynx or grizzly bears would be anticipated.

Direct, Indirect, and Cumulative Effects of the Action Alternative

Proposed activities would increase disturbance to grizzly bears (short-term) should they be in the area. Any disturbance would be additive to ongoing activities in the Active Porcupine Woodward Grizzly Bear Subunit under the Swan Valley Grizzly Bear Conservation Agreement. No changes in open road densities or security habitat would be anticipated. No changes in hiding cover would be anticipated. Thus negligible direct, indirect, or cumulative adverse effect to grizzly bears would be anticipated.

Proposed activities would increase potential for disturbance of Canada lynx, should they be in the area. Any disturbance would be additive to ongoing activities in the vicinity. The existing 175-acre seed tree harvest unit where the proposed study site would occur is currently Temporary Non-Lynx Habitat. The project proposal would not further alter any stands providing suitable lynx habitat. No changes in usable vegetative cover for lynx would be anticipated. Snags and coarse woody debris would be removed on 28 acres, which could reduce potential future den site attributes and structure usable by snowshoe hares. However, given the small scale of the proposed study site and low likelihood of coarse woody debris being a limiting factor for lynx in the Swan Valley, no measureable effect to lynx or hares would be anticipated. Thus overall, negligible adverse direct, indirect, or cumulative effect to lynx would be anticipated.

See Attachment D, Threatened, Endangered and Sensitive Species Checklist for further analysis.

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10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

No historic or archaeological sites have been located or identified in this area.

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11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No appreciable changes in visuals would occur in the project area.

Direct, Indirect, and Cumulative Effects of the Action Alternative

Overstory trees, advanced regeneration, and brush would be removed on 18 acres, increasing visibility within the project area. Over time, as planted trees grow, visibility within the unit would be expected to decrease, similarly to the no-action alternative. A visual screen of trees along the road on the north side of the project area would remain intact, providing a similar level of impeded visibility into the project area as currently exists.

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12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

No changes to demands on limited environmental resources would occur as a result of implementing the No-Action or Action Alternatives.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

The Montana Department of Natural Resources and Conservation, Northwestern Land Office, Swan Unit, issued the White Porcupine Multiple Timber Sale Project Final EIS in January 2009.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in human health and safety.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in human health and safety.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in industrial, commercial and agriculture activities and production.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in industrial, commercial and agriculture activities and production.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in quantity and distribution of employment.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in quantity and distribution of employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in local and state tax base and tax revenues.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in local and state tax base and tax revenues.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in demand for government services.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in demand for government services.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

On June 17, 1996, the Land Board approved the SFLMP. The SFLMP provides the philosophy adopted by DNRC through programmatic review (DNRC, 1996). The DNRC will manage the lands in this project according to this philosophy, which states:

> *Our premise is that the best way to produce long-term income for the trust is to manage intensively for healthy and biological diverse forests. Our understanding is that a diverse forest is a stable forest that will produce the most reliable and highest long-term revenue stream…In the foreseeable future, timber management will continue to be our primary source of revenue and our primary tool for achieving biodiversity objectives.*

On March 13, 2003, the DNRC adopted Rules (Administrative Rules of Montana [ARM] 36.11.401 through 450). These Rules provide DNRC personnel with consistent policy, direction, and guidance for the management of forested trust lands. Together, the SFLMP and Rules define the programmatic framework for this project.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in access to and quality of recreational and wilderness activities.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in access to and quality of recreational and wilderness activities.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in density and distribution of population and housing.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in density and distribution of population and housing.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in social structures and mores.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in social structures and mores.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No changes in cultural uniqueness and diversity.

Direct, Indirect, and Cumulative Effects of the Action Alternative

No changes in cultural uniqueness and diversity.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

The no-action alternative would not generate any return to the School Trust. No forest improvement fees would be collected. Fuels loadings would likely increase over time which could increase the potential for stand replacement fires.

Direct, Indirect, and Cumulative Effects of the Action Alternative

The Action alternative would generate approximately $7,200 in stumpage revenue and forest improvement fees for the Common Schools trust. The value of dead standing trees would be realized to the fullest extent practicable. No other uses other than forest management have been identified for the project area.

EA Checklist Prepared By:	**Name:** Tim Spoelma	**Date:** 9/8/2011
	Title: Silviculturist/Forest Ecologist	

V. FINDING

25. ALTERNATIVE SELECTED:

Upon review of the Checklist EA and attachments I find the Action Alternative as proposed meets the intent of the project objectives as stated in section I, Type and Purpose of Action. It complies with all pertinent environmental laws, DNRC State Forest Land Management Plan, and a consensus of professional opinion on limits of acceptable environmental impact. The No Action Alternative does not meet the project objectives. For these reasons I have selected the Action Alternative for implementation on this project.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

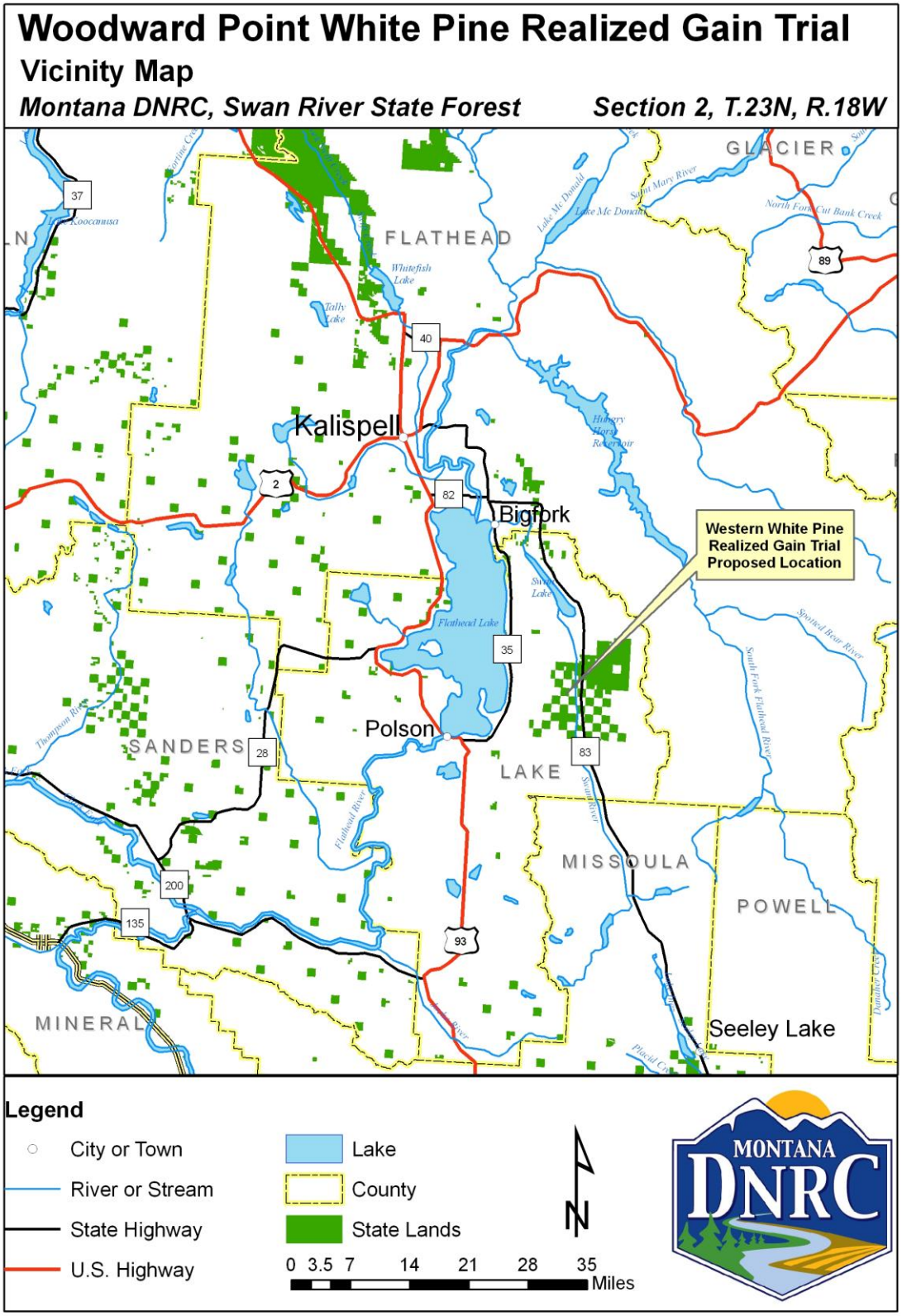
After a review of the scoping documents, Department policies, standards, guidelines, and the State Forest Land Management Plan (SFLMP), I find all the identified resource management concerns have been fully addressed in this Checklist EA and its attachments. The action alternative provides for income to the school trust and promotes the development of a healthy, biologically diverse, and productive forest. I find there will be no significant impacts to the human environment as a result of implementing the action alternative. Specific project design features and various resource management specialist recommendations have been implemented to ensure that this project will fall within the limits of acceptable environmental change and result in no significant impacts.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

	EIS		More Detailed EA	X	No Further Analysis

EA Checklist Approved By:	**Name:**	Shawn Thomas
	Title:	Forest Management Bureau Chief
Signature: /s/ SHAWN THOMAS	**Date**:	9/8/2011

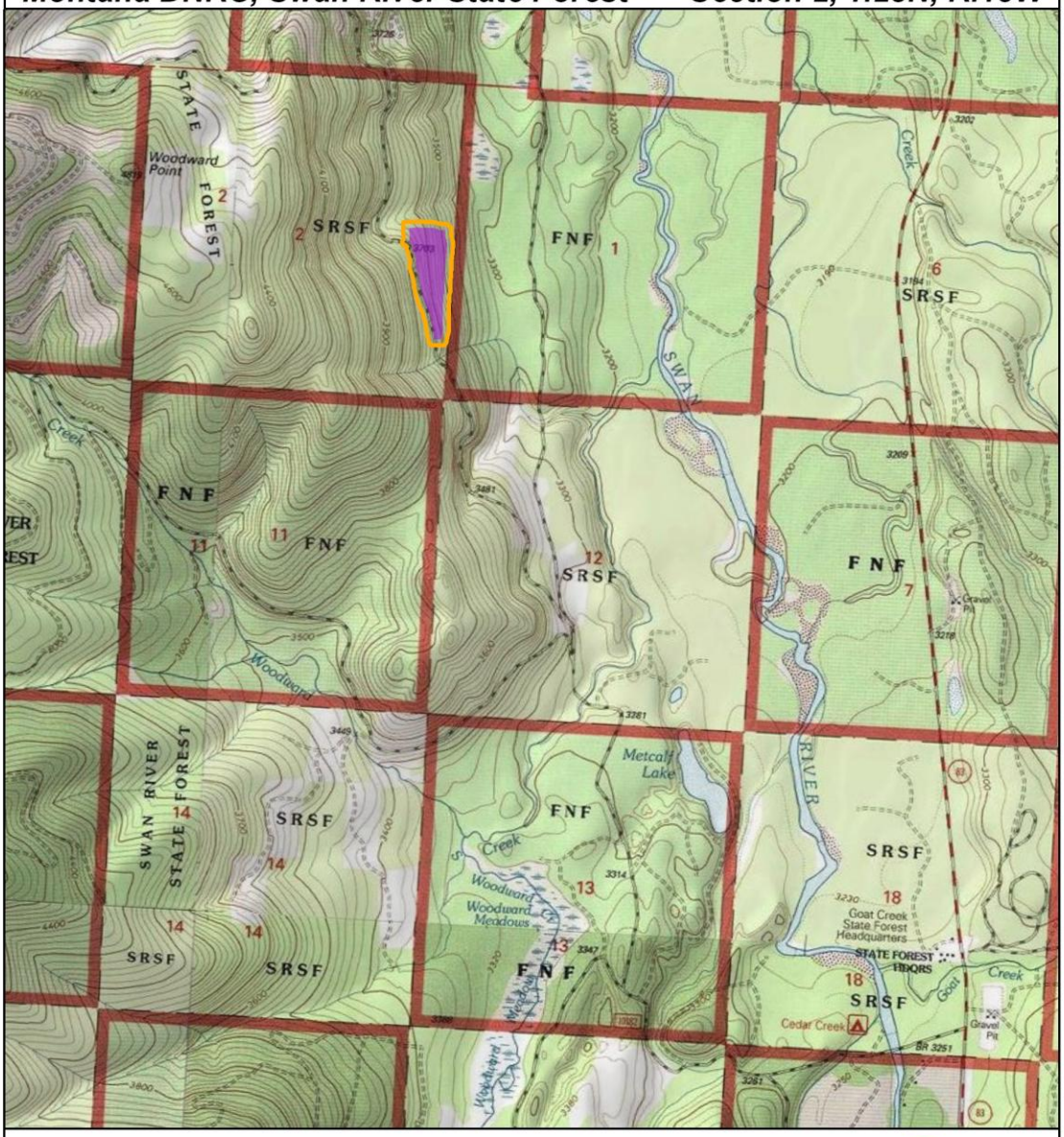
Attachment A
Maps



Woodward Point White Pine Realized Gain Trial

Site Location Map

Montana DNRC, Swan River State Forest ***Section 2, T.23N, R.18W***



Legend

Realized Gain Trial

100-foot Buffer

NORTH

0 0.25 0.5 0.75 1 Miles

Base Map Data Source: ESRI USA Topo Maps Layer, 5/20/2010
Map Created by: T. Spoelma, MT DNRC, 8/10/2011.

Attachment B
Preparers and Consultants

Preparers

Tim Spoelma, MT DNRC, Forest Management Bureau, Missoula, Silviculturist/Forest Ecologist

Ross Baty, MT DNRC, Forest Management Bureau, Missoula, Wildlife Biologist

Jeff Schmalenberg, MT DNRC, Forest Management Bureau, Missoula, Soil Scientist

Consultants
Individuals Consulted

Terry Thorpe, Forest Product Accountability Specialist, MT DNRC, Northwestern Land Office, Kalispell

Marc Rust, Director, Inland Empire Tree Improvement Cooperative, Moscow, Idaho

Ross Baty, MT DNRC, Forest Management Bureau, Missoula, Wildlife Biologist

Jeff Schmalenberg, MT DNRC, Forest Management Bureau, Missoula, Soil Scientist

Dan Roberson, Unit Manager, MT DNRC, Swan Unit, Swan Lake

Kristen Baker, Forest Management Supervisor, MT DNRC, Swan Unit, Swan Lake

References

DNRC, 2009a. White Porcupine Multiple Timber Sale Final Environmental Impact Statement. Swan River State Forest. January 2009.

DNRC, 2009b. DNRC compiled soils monitoring report on timber harvest projects, 1988-2005, 2nd Reprint Edition. Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, MT.

Martinson, A.H., Basko, W.J., United States Natural Resources Conservation Service and Montana Agricultural Experiment Station, 1999. Soil survey of Flathead National Forest Area, Montana. The Service,[Washington, D.C.], vii, 100 p., 106 p. of plates pp.

Attachment C

Request for Approval of Alternative Practices to the State Forest Land Management Administrative Rules (ARM 36.11.401-450)

Completing this form, attaching any supporting maps and documentation, and submitting it to the Forest Management Bureau Chief, serves as the formal request for site-specific alternative practices pursuant to ARM 36.11.449. Once signed by the Bureau Chief the form serves as the decision document.

ARM 36.11.449 reads:
(1) The department shall comply with ARM 36.11.401 through 36.11.445 when conducting forest management activities, unless approval has been obtained from the forest management bureau chief for alternative forest management practices. Alternative practices may be designed in response to site-specific conditions encountered while planning forest management activities.
(2) The forest management bureau chief may approve proposed alternative practices only if such practices would be otherwise lawful, and it is determined with reasonable certainty that the proposed alternative practices would provide adequate levels of resource protection.

Description of the Project

The DNRC Forest Management Bureau wishes to establish a realized gain trial for western white pine on trust lands. The purpose of this trial is to monitor blister rust infection rates and subsequent survival and mortality of various generations and families of rust-resistant western white pine. Establishing this trial would involve a cooperative effort among the DNRC, Inland Empire Tree Improvement Cooperative, and USDA Forest Service. In cooperation with the Swan Unit, NWLO, a candidate site for this trial was identified on a parcel of trust land in Section 2, T.23N, R.18W approximately 10 miles south of Swan Lake, MT.

The trial layout requires a plantable area where the test trees would be planted surrounded by a 100-foot buffer from existing seed trees/seed walls. Within the plantable area, test trees will be planted in blocks of 49 with an 8'x 8' spacing, with either 44 or 46 blocks in each replication. There will be three replications on the site. Two rows of border trees will be planted in the 100-foot buffer surrounding the test trees. On this site, a plantable area of approximately 17 acres is necessary to have sufficient space to install the test trees, and the 100-foot buffer increases the area needed to 28 acres. The existing live overstory must be removed on all 28 acres, and snags must be removed on the 17-acre area where test trees would be planted. Site preparation (slash removal) would occur on the 17 acres area where test trees would be planted.

The candidate site was harvested in 2010 as a part of cutting unit 2-20 of the White Porcupine #1 Timber Sale. Unit 2-20 encompasses 175 acres, most of which was treated with a seed tree harvest with the exception of a reserve area that provides visual screening for grizzly bears. There are currently 6 trees per acre on the site, including 5 live trees and 1 dead (snag) tree per acre in the 28 acre area. The activities necessary to prepare the site and install the trial include the following:

1. Live overstory removal on approximately 28 acres and snag removal on 17 acres.
2. Excavator site preparation on approximately 17 acres
3. Pile burning to dispose of slash
4. Planting on up to 28 acres
5. Tree browse prevention (PlantSkydd and seedling nets) on approximately 7000 seedlings.

The Rule(s)

36.11.411 BIODIVERSITY - SNAGS AND SNAG RECRUITS

(1) The department shall retain snags and snag recruits in all harvest units involving live timber, including seed tree removals, fire, and other salvage operations as follows:

(a) On the warm and moist HTG and the wet HTG, the department shall retain an average of approximately two snags and two snag recruits over 21 inches DBH, per acre.

(b) On all other HTG, the department shall retain an average of approximately one snag and one snag recruit over 21 inches DBH, per acre.

(c) In all cases, if snags or recruits over 21 inches DBH are not present, the next largest size snag or recruit shall be retained.

(d) Retained snags and recruits may be evenly distributed or clumped.

(e) If there is an absence of sufficient snags or recruits, some substitution between the two may occur.

(f) Cull trees shall qualify as recruits provided they do not contribute to:

(i) insect and disease problems;

(ii) pose a human safety issue; or

(iii) present concerns over dysgenic practices.

36.11.414 BIODIVERSITY - RETENTION OF COARSE WOODY DEBRIS

(1) Adequate CWD shall be left on site to facilitate nutrient conservation and cycling, maintenance of biodiversity, wildlife needs, and other considerations.

(2) CWD retention amounts shall be determined at the project level using scientifically accepted technical references as determined by the department.

The Alternative Practices Being Requested:

Installing the trial requires the complete removal of the live overstory on 28 acres, and removal of snags on 17 acres, which conflicts with ARM 36.11.411—Biodiversity-Snags and Snag Recruits. Complete overstory removal is necessary to 1) provide a uniform site with consistent levels of sunlight and shade for each tree planted, 2) avoid unnecessary or unintentional mortality of test trees due to overstory trees falling on test trees, and 3) reduce the likelihood of natural seeding of trees into the test area.

Installing the site also requires a degree of site preparation that may leave less CWD on a portion of the site (17 acres) than would typically be left under normal operations. Larger diameter slash, such as logs and root wads of fallen trees, must be removed from the site in order to provide continuity for planting spots within the site. Tree are to be planted in 49 tree blocks, and the loss of a planting site within a block would require moving the entire block, necessitating a larger area for the site. The best information available indicates that approximately 12-15 tons/acre of CWD should be left following harvesting on sites similar to the proposed trial site; however, the level of site preparation necessary to provide a maximum number of planting spots within the smallest possible area would leave approximately 5 tons/acre of CWD. The CWD left on the 17 acres following site preparation would consist of fine materials that could be moved by hand when planting trees. Larger CWD would be removed from the site during site preparation activities and either left or burned in piles in the 100-foot buffer surrounding the test trees.

How Adequate Levels of Resource Protection Would be Provided

Establishing a realized gain trial for western white pine is a one-time opportunity that involves the use of a small and specific area to conduct a research project that will inform researchers, and ultimately forest managers who manage for western white pine, of interactions between white pine blister rust and resistant strains of western white pine. Because of the limited size and scope of the project, impacts to snags and snag recruits and CWD resources within the section where the project occurs are expected to be minimal.

The amount of seed trees, snags, snag recruits, and CWD left within harvest unit 2-20 currently exceeds the minimum standard set forth in the Forest Management Rules (an average of 6 trees per acre consisting of 2 seed trees, 3 snag recruits, and 1 snag). For the foreseeable future, the two seed trees per acre on the portion of unit 2-20 would serve as additional snag recruits. No additional harvesting is planned in unit 2-20 at this time; however, future unforeseen events such as wildfire or windthrow could reduce the amount of seed trees, snags, and snag recruits left on the site, and timber harvesting could be used address such situations should they occur. Unharvested areas within Section 2 and surrounding areas would continue to provide snag and snag recruits at their current levels for the foreseeable future.

The Site-Specific Conditions Encountered that the Alternative Practices are Designed to Address

The site for the proposed project currently contains snags, snag recruits and CWD that must be removed from the site in order to control for and reduce variability in site conditions to the greatest extent practicable.

Timeline

Indicate if there are sensitive timelines related to the decision.

The trial would be planted in the spring of 2012, requiring that overstory removal, site preparation, and planting grid layout are completed during the fall of 2011.

Signature of Project Leader	**Date**
/s/ Timothy P. Spoelma, FMB Silviculturist/Forest Ecologist	9/8/2011

Review and Decision by the Forest Management Bureau Chief

I have reviewed this proposed alternative practice and have determined that there would be minimal potential for additional adverse effects to snags and coarse wood debris as a result of implementation. I believe as proposed the mitigations planned would provide for adequate levels of resource protection as intended in authorizing an alternative practice. I am therefore approving this alternative practice.

Signature	
/s/ SHAWN THOMAS	9/8/2011
Forest Management Bureau Chief	**Date**

Attachment D

Woodward Point White Pine Realized Gain Trial

R. Baty
Wildlife Biologist
Montana Department of Natural Resources and Conservation

September 2, 2011

CHECKLIST FOR ENDANGERED, THREATENED AND SENSITIVE SPEICES
Pertains to Section II. 9. of the DS-252 DNRC Environmental Checklist

Swan River State Forest

Threatened and Endangered Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
Lynx (*Felis lynx*) Habitat: SF hab.types, dense sapling, old forest, deep snow zone	[Y] Potential for minor short-term disturbance and reduction of coarse woody debris. Negligible adverse direct, indirect and cumulative effects would be anticipated given type, scope and scale of proposed activities. (see more descriptive analysis in Section 9 of the EA checklist)
Grizzly Bear (*Ursus arctos*) Habitat: recovery areas, security from human activity	[Y] Potential for minor short-term disturbance. Negligible adverse direct, indirect and cumulative effects would be anticipated given type, scope and scale of proposed activities. (see more descriptive analysis in Section 9 of the EA checklist)

DNRC Sensitive Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
Bald Eagle (*Haliaeetus leucocephalus*) Habitat: late-successional forest <1 mile from open water	[N] Nesting habitat not present in project area or nearby vicinity. Nearest nest >5 miles distant. No direct, indirect or cumulative effects anticipated.
Gray Wolf (*Canis lupus*) Habitat: ample big game pops., security from human activity	[Y] Potential for minor short-term disturbance. Negligible adverse direct, indirect and cumulative effects would be anticipated given type, scope and scale of proposed activities.
Coeur d' Alene Salamander (*Plethodon idahoensis*) Habitat: waterfall spray zones, talus near cascading streams	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Flammulated Owl (*Otus flammeolus*) Habitat: late-successional ponderosa pine and Doug.-fir forest	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Black-Backed Woodpecker (*Picoides arcticus*) Habitat: mature to old burned or beetle-infested forest	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.

Pileated Woodpecker (*Dryocopus pileatus*) Habitat: late-successional ponderosa pine and larch-fir forest	[Y] Potential for minor short-term disturbance and reduction of coarse woody debris, large seed trees and snags. Negligible adverse direct, indirect and cumulative effects would be anticipated given type, scope and scale of proposed activities.
Northern Bog Lemming (*Synaptomys borealis*) Habitat: sphagnum meadows, bogs, fens with thick moss mats	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Fisher (*Martes pennanti*) Habitat: dense mature to old forest <6,000 ft. elev. and riparian	[Y] Potential for minor short-term disturbance and reduction of coarse woody debris, large seed trees and snags. Negligible adverse direct, indirect and cumulative effects would be anticipated given type, scope and scale of proposed activities.
Peregrine Falcon (*Falco peregrinus*) Habitat: cliff features near open foraging areas and/or wetlands	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Common Loon (*Gavia immer*) Habitat: cold mountain lakes, nest in emergent vegetation	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Harlequin Duck (*Histrionicus histrionicus*) Habitat: white-water streams, boulder and cobble substrates	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Columbian Sharp-Tailed Grouse (*Tympanuchus Phasianellus columbianus*) Habitat: grassland, shrubland, riparian, agriculture	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Mountain Plover (*Charadrius montanus*) Habitat: short-grass prairie, alkaline flats, prairie dog towns	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.
Townsend's Big-Eared Bat (*Plecotus townsendii*) Habitat: caves, caverns, old mines	[N] Habitat not present in project area or nearby vicinity. No direct, indirect or cumulative effects anticipated.